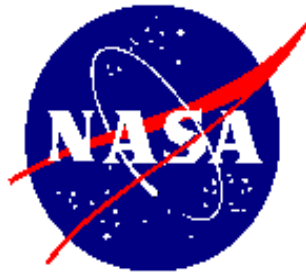


# ***ISO 9000 and NASA***



**Office of Safety &  
Mission Assurance  
(Code Q)**

**April 24, 1995**

# WHERE WE WERE

- NASA QUALITY PROCESS DEFINED IN NHB - 5300.4(1B) DATED 1969 (INSPECT IN QUALITY)
  - **PRODUCT** FOCUS
  - DEFECT DETECTION AND CORRECTION
  - PRESCRIPTIVE “HOW TO” APPROACH
  - APPLICABLE TO NASA CONTRACTORS ONLY
- 1980’S QUALITY PARADIGM CHANGE (DESIGN IN QUALITY)
  - EMPHASIS ON PROCESS CONTROL
  - EARLY DESIGN INVOLVEMENT AND INTEGRATION
  - HEIGHTENED CUSTOMER AWARENESS

# GLOBAL QUALITY PERSPECTIVE

- EMERGENCE OF ISO 9000 QUALITY STANDARD (1987)
  - TC 176 CREATED 1979
- WHAT ISO 9000 IS
  - WORLD WIDE STANDARD, ADOPTED BY 94 COUNTRIES
  - QUALITY MANAGEMENT **SYSTEM** FOCUS
  - **FLEXIBLE** MINIMUM SET OF REQUIREMENTS
- WHAT ISO 9000 IS NOT
  - A PRODUCT ORIENTED SPECIFICATION
  - A GUARANTEE OF HIGH QUALITY HARDWARE
  - ANOTHER LAYERING OF REQUIREMENTS

# ISO 9000 QUALITY STANDARDS

- **ISO 9000** *GUIDELINES FOR SELECTION AND USE OF QUALITY MANAGEMENT AND QUALITY ASSURANCE STANDARDS*
- **ISO 9001** *QUALITY SYSTEMS -MODEL FOR QUALITY ASSURANCE IN DESIGN, DEVELOPMENT, PRODUCTION, INSTALLATION, AND SERVICING (9 PAGES OF REQ'TS)*
- **ISO 9002** *QUALITY SYSTEMS- MODEL FOR QUALITY ASSURANCE IN PRODUCTION , INSTALLATION AND SERVICING*
- **ISO 9003** *QUALITY SYSTEMS- MODEL FOR FINAL INSPECTION AND TEST*
- **ISO 9004** *GUIDELINES - QUALITY MANAGEMENT AND QUALITY SYSTEM ELEMENTS*

# ISO 9001 REQUIREMENTS

## **1. MANAGEMENT RESPONSIBILITY**

- 2. QUALITY SYSTEM
- 3. CONTRACT REVIEW
- 4. DESIGN CONTROL
- 5. DOCUMENT/ DATA CONTROL
- 6. PURCHASING
- 7. CONTROL OF CUSTOMER SUPPLIED PRODUCT
- 8. PRODUCT IDENTIFICATION AND TRACEABILITY
- 9. PROCESS CONTROL
- 10. INSPECTION AND TESTING
- 11. CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

- 12. INSPECTION AND TEST STATUS
- 13. CONTROL OF NONCONFORMING PRODUCT

## **14. CORRECTIVE AND PREVENTIVE ACTION**

- 15. HANDLING, STORAGE, PACKAGING, PRESERVATION, AND DELIVERY
- 16. CONTROL OF QUALITY RECORDS

## **17. INTERNAL QUALITY AUDITS**

- 18. TRAINING
- 19. SERVICING
- 20. STATISTICAL TECHNIQUES

# ISO 9000 REGISTRATION

- AN INDICATION OF THE COMPLIANCE OF A QUALITY MANAGEMENT SYSTEM TO ISO 9000 STANDARDS
  - NOT A MEASURE OF PRODUCT QUALITY
- NOT A REQUIREMENT OF ISO 9000 STANDARDS
- HAS **POTENTIAL** TO SAVE SUPPLIERS AND CUSTOMERS CONSIDERABLE COSTS
- PROMOTES INTERNATIONAL COMPETITION
- U.S. REGISTRATION SYSTEM LACKS WORLD WIDE CREDIBILITY
  - MANY U.S. REGISTRATIONS ADMINISTERED BY FOREIGN REGISTRARS
- NASA PROCEEDING CAUTIOUSLY
  - OPTIONAL FOR EACH NASA CENTER

# NASA ISO 9000 POLICY

- OFFICE OF SAFETY AND MISSION ASSURANCE (CODE Q) POLICY LETTER INITIATED TRANSITION
  - FEBRUARY 4, 1994
- NASA MANAGEMENT INSTRUCTION (NMI) 1270.3 - DECEMBER 6, 1995
  - APPLICABLE TO NASA CENTERS AND CONTRACTORS
- FIELD CENTER WORKING GROUP (W/G) FORMED TO IMPLEMENT CHANGE
  - ASSURES CONSENSUS AMONG NASA CENTERS
  - IN-HOUSE NASA IMPLEMENTATION PLANNING
    - » COMPLIANCE BY 1997

# WHERE WE ARE GOING

- APPLY ISO 9000 ON NEW NASA PROCUREMENTS
  - CONSOLIDATED SHUTTLE OPERATIONS CONTRACT
  - SMALL EXPENDABLE LAUNCH VEHICLE (SELV) RFP
- APPLY ISO 9000 TO NASA IN-HOUSE OPERATIONS
  - FIELD INSTALLATIONS IMPLEMENTATION PLANS SUBMITTED (FULL IMPLEMENTATION BY MID 1997)
- MAINTAIN CLOSE COOPERATION WITH OTHER FEDERAL AGENCIES AND INDUSTRY ASSOCIATIONS
  - GOVERNMENT INDUSTRY QUALITY LIAISON PANEL (GIQLP)



# IMPLEMENTATION ISSUES

- INCREASED NASA ASSESSMENT RESPONSIBILITY
  - DIVERSE CONTRACTOR QUALITY MANAGEMENT SYSTEMS
  - UNIQUE AND **OPTIMAL** QUALITY PROCESS AT EACH CONTRACTOR
- ISO 9000 3RD PARTY REGISTRATION NOT INTERNATIONALLY ACCEPTED AND DEPENDENT ON INTEGRITY OF REGISTRARS
  - US GOVERNMENT NOT STEPPING UP TO ACTIVE OVERSIGHT ROLE
  - THE JURY IS STILL OUT ON ITS USEFULNESS

# INTERAGENCY PARTNERSHIP

- GOVERNMENT INDUSTRY QUALITY LIAISON PANEL (GIQLP)
  - ENABLE USE OF A SINGLE QUALITY MANAGEMENT SYSTEM AT A CONTRACTOR'S FACILITY
  - PROMOTE ADVANCED QUALITY CONCEPTS
  - STREAMLINE OVERSIGHT PROCESS
- MOU SIGNED APRIL 24, 1995
  - 12 GOVERNMENT AGENCIES
  - 3 INDUSTRY ASSOCIATIONS
- ENTERING DEMONSTRATION PHASE ON SINGLE QUALITY SYSTEM
  - VOLUNTARY TO CONTRACTORS

# PARTICIPATING AGENCIES

- NASA - MR. FRED GREGORY
- DOD/OSD - MR. JOHN BURT
- DOD/USAF - MR. BLAISE DURANTE
- DOD/NAVY - MR. DAN PORTER
- DOD/ARMY - MR. HERBERT FALLIN
- DOD/DLA - RADM LEONARD VINCENT
- DOT/CG - RADM THOMAS COLLINS
- DOT/MARAD - MR. MICHAEL PURSLEY
- DOT/FAA - MR. DENNIS DEGAETANO
- DOC/NIST - DR. BELINDA COLLINS
- DOC/NOAA - MR. ROBERT BROWN
- GSA - MS. IDA USTAD